Money Isn't All You're Saving

Improve Energy Efficiency with Energy Efficient Lighting

Builder Guide

DESCRIPTION

Currently available energy efficient lighting can save up to 75% of the energy used to light homes. These lighting technologies typically cost more than traditional technologies, but the substantial energy savings and longer bulb life can more than pay for the additional cost. These technologies are becoming increasingly available wherever traditional lighting is sold, and as their popularity increases, prices continue to fall.

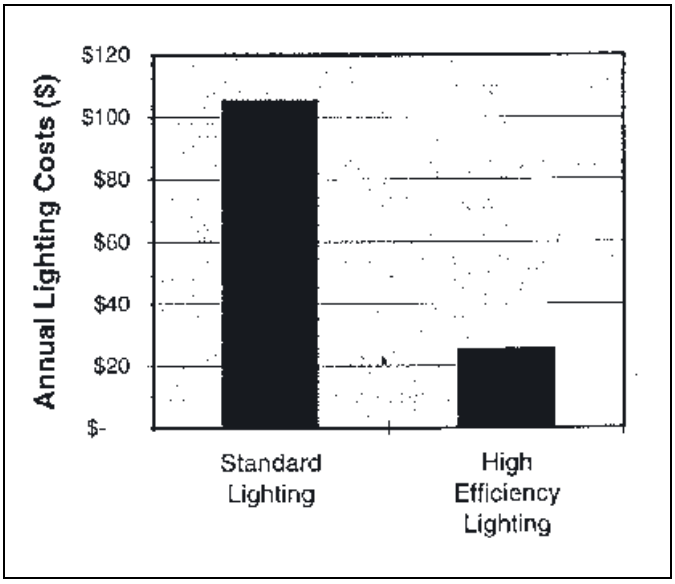
Energy efficient lighting technologies includes compact fluorescent lights in place of traditional incandescent lights; highly efficient fluorescent lamps; and controls such as occupancy sensors for bathrooms and laundry rooms and motion/photocell sensors for outdoor lighting.

Compact Fluorescent Lights (CFL) are energy-efficient, long-lasting substitutes for incandescent lights. They are available in a wide variety of configurations for many applications around the house, including recessed, sconce, wall mounted and ceiling mounted fixtures. They use efficient fluorescent lamp technology and can be shaped like standard incandescent bulbs.

High efficiency Fluorescent lighting can be installed In spaces normally lit by standard fluorescent lights such as kitchens, laundry rooms, basements and garages. These newer fluorescent technologies use T8 bulbs and noise-free electronic ballasts. They can save up to 40% of the energy used by standard fluorescent light fixtures.

Motion sensors are applied to outdoor lighting to instantly turn lights on when motion is detected and then turn them off when no motion is detected for a specified period of time. Similarly, ***occupancy sensors*** are installed inside homes (i.e. children's bathrooms, laundry rooms and basements) where they can automatically turn lighting on when people enter a room and then off when not in use.

High Efficiency Lighting Reduces Household Energy Costs



BENEFITS

Providing energy efficient lighting and controls in homes offers "state-of- the-art" technologies, reduced operating costs, longer bulb life, and improved lighting quality. All of this adds to a home's value at very little additional cost.

- **Compact fluorescent lamps use as little as one-fourth the energy of traditional lighting.**

Compact fluorescent lamps are up to four times more efficient than incandescent lamps. An 18 watt compact fluorescent lamp provides the same light output as a 75 watt incandescent. This reduced electricity use amounts to potential annual savings of over $80 for a typical household (12 lights, each on for 4 hours a day - see chart above). While these light bulbs cost more, they last for years and can save many times their cost in energy and bulb replacement savings.

❑ **Long-lived compact fluorescent bulbs add to home owner convenience**.

Incandescent lamps produce light using a tungsten filament which eventually breaks, causing the lamp to burn out at about 1,000 hours. Fluorescent lamps use mercury vapor and a phosphor coating which can last over 10,000 hours. While compact fluorescent light bulbs cost more than incandescent bulbs, they can last for years without being replaced, avoiding annoying bulb replacements.

❑ **Compact fluorescent lamps produce high quality light.**

By using advanced phosphor coatings and electronic ballasts, compact fluorescent lamps provide a high quality light without flicker or noise. They are available in a wide range of wattage, color temperatures and sizes.

❑ **Motion sensors can increase security and reduce energy consumption.**

Motion sensors instantly turn outside lights on when motion is detected in a specified area. This automatic operation increases security by deterring criminal activity. When no motion is detected for a specified period of time, the lights turn-off, eliminating unnecessary energy consumption.

❑ **Occupancy sensors can increase convenience.**

Occupancy sensors can significantly increase convenience by automatically turning lights on. For instance, it can be very convenient for lights to turn on automatically when walking into a laundry room or basement carrying a basket or other large items. Occupancy sensors can also shut lights off when nobody is using a room, significantly reducing energy consumption in rooms where lights are left on during long periods of non-use. They are an inexpensive and worry free convenience for the well-equipped home.

INTEGRATION

❑ **Dimming options are limited with compact fluorescent lamps.**

Only certain types of compact fluorescent lamp and ballast combinations can be dimmed, and these can be expensive. However, prices are coming down as this option becomes more popular. Consult with lighting supplier's or manufacturer's instructions to determine dimming compatibility.

❑ **Motion sensors and occupancy sensors should be adjusted for expected usage.**

The range of motion, sensitivity of motion and time between motion can be specified in many motion sensors and occupancy sensors. Factory settings should be checked to ensure they fit residents needs.

RESOURCES

❑ *The Lighting Pattern Book for Homes*. Lighting Research Center, Albany, NY. Order by calling (518) 276-8716.

❑ *Builders Guide to Home Lighting*. Lighting Research Center, Albany, NY. Order by calling (518) 276-8716.

❑ National Lighting Bureau, Washington, DC, offers a variety of publications for designing and installing lighting systems. (202) 457-8437.